REMARKS

The following remarks are responsive to the Final Office Action dated July 9, 2010.

Claim Rejection Under 35 U.S.C. § 103

In the Final Office Action, the Examiner rejected claims 1, 8, 11-13, 15, 18-22, 26, 27, 30, 33, 39, and 40 under 35 U.S.C. 103(a) as being unpatentable over Pesce et al. (U.S. Patent No. 7,328,278), Sankaran et al. (U.S. Patent Publication No. 2003/0231587) and Gaddis et al. (U.S. Patent No. 7,554,930). Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the techniques defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed techniques.

Response to Examiner's Characterization of Applicant's Arguments

Prior to addressing each individual claim, Applicant directs the Office to remarks set forth by the Examiner in the "Response to Arguments" section of the present Office Action. In this section, the present Office Action mischaracterizes many argument set forth in the record by the Applicant and, in doing so, effectively reads out elements expressly required by the claims.

First, in the previous Amendment filed May 6, 2010, Applicant point out that the combination of Pesce in view of Sankaran and Gaddis do not teach or suggest, when the number of routes exported from the exterior routing protocol process to the interior routing protocol process exceeds an export limit, operating the network device in an overload condition in which the network device … (ii) rebuilds the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices, as required by claim 11. Applicant noted in particular that this feature of claim 11 requires rebuilding the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices. None of Pesce, Sankaran or Gaddis, or even the combination thereof, provide any suggestion of rebuilding the routing information of the interior routing protocol such that each interior routes has a particular metric. Applicant even noted that, while Pesce describes a metric value, none of the references teach rebuilding routes to set a maximum metric value for each route, as recited by claim 11. In particular, this Pesce metric value is

associated with route mapping information that is distinctly different from routing information of the interior routing protocol and, moreover, this use of route mapping information by Pesce in no way suggests the features required by claim 11.

In a section of the current Final Office Action entitled "Response to Argument" beginning on page 3, the Examiner appears to improperly read out these pertinent aspects of this feature of claim 11 when applying the prior art and responding to Applicant's arguments. To illustrate, the Examiner summarized the above argument in this section as "… applicant argues that cited references do not teach utilizing a metric." This is not the case and, in fact, Applicant acknowledged in the previously filed Amendment that Pesce teaches to a metric value, but the teachings related to Pesce's metric value, even in view of the other references, suffer from the deficiencies noted above. Thus, rather than address these deficiencies noted above with respect to Pesce, the Examiner then indicates in the "Response to Arguments" section of the current Final Office Action that "Both Gaddis and Sankaran teach utilizing a path metric such as AS_Path (Gaddis column 6, lines 44-58, Sankaran paragraph 32), in addition to the metric utilized by Pesce to determine table information and which routes to maintain within the table." According to the cited portion of Gaddis, the AS_Path is characterized as an attribute that "keeps track of the various ASs [sic] that a particular route goes through." This portion of Gaddis indicates that this AS_Path attribute is stored as a list of ASes through which any given route passes, where ASes refers to autonomous systems (which usually correlate one-to-one with service provider networks). This AS_Path attribute therefore stores a list of ASes and is not a maximum metric that defines a maximum distance from the network device to neighboring network devices as required by Applicant's claim 11. Moreover, the cited portion of Sankaran differentiates between route metrics and this AS_Path attribute when specifically stating that "a route may include a destination IP address, a next hop IP address, age information, preference information, ***metric information***, any associated labels, ***an AS path***, state information, or any combination thereof." (Emphasis added) In other words, the AS Path referred to by both Gaddis and Sankaran is not even considered a metric even by the references themselves, contrary to the Examiner's assertions otherwise. Moreover, regardless of whether the AS_Path can be construed as a metric or not, or even taking Sankaran's explicit mention of metric information, not one of the applied references, whether considered alone or in combination, teach or suggest , when the number of routes exported from the exterior routing protocol process to the interior routing

protocol process exceeds an export limit, operating the network device in an overload condition in which the network device … (ii) rebuilds the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices, as required by claim 11.

To summarize, contrary to the Examiner's characterization of Applicant's arguments, Applicant has never argued that the general notion of a metric does not exist in the prior art and acknowledged the particular metric value as taught by Pesce. Instead, Applicant pointed out that this Pesce's metric value does not teach or suggest rebuilding the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices recited by claim 11. The Pesce metric value is associated with route mapping information that is distinctly different from routing information of the interior routing protocol and, moreover, this Pesce metric value is not even so much as updated in the manner required by claim 11. Consequently, the Examiner has read out pertinent aspects of this feature of claim 11, which is impermissible. Applicant respectfully requests that the Examiner address the actual language, and not some generalized form of this language, that sets out this feature of claim 11.

Second, as another illustration of improperly reading out pertinent limitations of another feature of claim 11, consider Applicant's argument in the previous Amendment where Applicant argued that the applied references do not teach or suggest when the number of routes exported from the exterior routing protocol process to the interior routing protocol process exceeds an export limit, operating the network device in an overload condition in which the network device: (i) updates routing information of the interior routing protocol to clear the routes previously exported from the exterior routing protocol, as required by claim 11. With respect to this feature of claim 11, the Examiner turned to Sankaran in both the previous and the current Office Action, explicitly acknowledging that "Pesce does not expressly teach a client setting an export limit for the device." Applicant rebutted this portion of the rejection, correctly noting that Sankaran teaches to "a threshold that triggers different discard algorithms" and that, in this sense, Sankaran "provides for 'threshold specific discard algorithms' that are applied once certain thresholds are reached." (Bottom of page 11, Applicant's Amendment filed May 6, 2010) While

acknowledging these teachings, Applicant concluded that Sankaran fails to teach or suggest the features of claim 1 as a whole because Sankaran culls the routing table to remove all **redundant** routes (i.e., duplicate routes), which is substantially different from updating route information of the interior routing protocol to clear all of the routes that were previously exported from the exterior routing protocol such that only interior routes remain, as required by Applicant's claim 11. That is, claim 11 requires that certain routes are cleared, i.e., routes that were previously exported from the exterior routing protocol such that only interior routes remain. Applicant argued that Sankaran's removal of redundant routes does not teach or suggest these features as a whole.

The Examiner, in the "Response to Arguments" section, mischaracterizes this argument when stating that "Applicant further argues that cited references do not teach clearing routes from the table when a limit is reached." In this way, the Examiner, in the "Response to Arguments" section fails to address the deficiency of Sankaran, instead focusing on an argument the Applicant never made. The Examiner again appears to focus on a generalization of this feature of claim 11, and rejecting a generalized feature rather than consider the explicit claim language as a whole, which is required. Again, Applicant respectfully requests that the Examiner address the actual language, and not some generalized form of this language, that sets out this feature of claim 11.

Pesce in view of Sankaran and Gaddis fail to disclose or suggest these features defined by Applicant's claim 11, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed features for the reasons presented in the previously filed Amendment and represented below for the Examiner's convenience.

Failure to achieve the claimed invention and improper hindsight

In addition, Applicant submits that the applied references, even if combined, result in a router that still suffers from the very deficiencies of the prior art implied by Applicant's specification. Paragraph [0038], for example, describes how routers or other network devices that do not support the techniques will not enter an "overload condition" in which a router intelligently removes itself from the network and effectively may avoids network failure through the update and successive advertisement of the updated routing information for the interior routing protocol. This feature is set forth, for example, in claim 11 as requiring, when the

number of routes exported from the exterior routing protocol process to the interior routing protocol process exceeds an export limit, operating the network device in an overload condition in which the network device: (i) updates routing information of the interior routing protocol to clear the routes previously exported from the exterior routing protocol, (ii) rebuilds the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices, and (iii) advertises the updated routing information to another network device

Applicant described potential befits of the claimed techniques on pages 9 and 10 of the previously filed Amendment as follows:

> To aid the understanding of how advertising this information may effectively remove the network device from the network, consider that other network devices that receive this routing information typically respond by performing a process referred to as routing [sic] resolution to select routes to interior network destinations based on the advertised metrics. By advertising metrics associated with a maximum value (i.e., a value sufficient to cause the other network device to select routes other than those routes advertised by the overloaded network device) the other network devices select alternate routes to the same destinations that avoid the network device) "effectively" removes the overloaded network device because the other network devices will most likely select the other route. If there is not another route to the same destination, however, the other network devices will select the overloaded network device but will do so knowing that it may take longer to reach that destination than it normally would. Consequently, should an overload condition occur, the techniques set forth by claim 11 provide a form of graceful failure that allows the overloaded router to provide limited routing functionality for routes that require use of the router.

In other words, interior routing protocols may be overloaded causing network devices, such as routers, to fail or choke when processing routes leaked from an exterior routing protocol to the interior routing protocol. Pesce does not recognize this problem or provide a solution. In fact, Pesce appears to overlook this aspect of the prior art. Sankaran does not recognize this

deficiency, but instead focuses on limitations of the hardware, i.e., space available to store routes on storage devices and memory, within the network device, which is a distinctly different problem from that solved by the techniques set forth by claim 11. Gaddis, like Pesce, does not address this problem or provide a solution to this problem.

The Examiner relies on this combination of Pesce in view of Sankaran and Gaddis to form the rejection of claim 11 without one of these applied references so much as mentioning this problem nor providing any solution to the problem. As such, the combination set forth by the Examiner appears to arise out of improper use of hindsight. Absent access to Applicant's disclosure, one of ordinary skill in the art would have found no reason to combine the cited references in the manner proposed by the Office Action to result in the features of amended claim 1. The United States Supreme Court recently reiterated its counsel to other courts as well as the U.S. Patent Office, stating "A factfinder should be aware, of course, of the distortion caused by hindsight bias and be cautious of arguments reliant upon *ex post* reasoning."[1] Modification of Pesce in view of Sankaran results in a system capable of defining a threshold and a threshold-specific discard algorithm that limits the exportation of routes from the exterior routing protocol to the interior routing protocol based on a storage capacity available to store routes by the interior routing protocol, which is substantially different from the techniques set forth in claim 11 for the reasons both noted above and below. Further combining Gaddis with this Pesce/Sankaran system results in a system that enables the definition of this threshold as a size limit placed on the prefix/mask. Applicant is unsure as to how this combination may produce any feasible result, let along the results that may be achieved by the techniques set forth by claim 11.

Remarks

The remainder of the current Final Office Action reiterates the rejection presented in the previous Non-Final Office Action mailed January 6, 2010 with some minor updates or changes. In response to this reiterated rejection, Applicant reproduces below for the Examiner's convenience the arguments previously presented in the prior Amendment filed May 6, 2010, updating these arguments where appropriate to correct for typographical errors and the current status of the claims.

[1] *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 421 (2007).

Pesce, Sankaran and Gaddis

With reference to independent claim 11, Pesce, Sankaran and Gaddis lack any teaching that would have suggested a method comprising, when the number of routes exported from the exterior routing protocol process to the interior routing protocol process exceeds an export limit, operating the network device in an overload condition in which the network device: (i) updates routing information of the interior routing protocol to clear the routes previously exported from the exterior routing protocol, (ii) rebuilds the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices, and (iii) advertises the updated routing information to another network device.

The combination of references fails to provide any teaching to suggest these aspects of Applicant's claim 11. Pesce teaches to a system that allows routing information stored to a first routing database to be exported to a second routing database in accordance with stored route mapping information.[2] Pesce describes one example of applying this route mapping information in column 3, lines 23-28 in which the stored route mapping information is used to export "said routing information from a first routing database … of the first routing source, e.g., the OSPF protocol, and [import] it into a second routing database … of a second routing source, e.g.., the BGP protocol." The OSPF protocol is often considered an interior routing protocol, while BGP is often considered an exterior routing protocol. Pesce further indicates that this system may employ blocking information that "identifies at least one couple of routing sources … and overrides the routing mapping information."[3] Pesce explains that this blocking information is useful "in order to leave to the operator the possibility of blocking some kind of mapping in particular operating conditions of the network."[4] Pesce suggests that each rule in a table that stores the route mapping information, where such rule is referred to an entry in a set rule table, comprises information relating to at least a metric value and a metric scale.[5] Pesce, however, provides little clarification as to what this metric represents. In column 9, lines 17-25, Pesce

[2] Abstract.
[3] Column 4, lines 52-59.
[4] Column 4, lines 59-61.
[5] Column 5, lines 15-18.

indicates that a lower metric value is to be used for a metric filter, where "[i]n order to match, routes must have a metric value higher or equal to the value reported in this field."

In rejecting the aspect of claim 11 directed to rebuilding the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices, the Examiner suggests that the metric associated with the rules of the route mapping information is the same as Applicant's maximum metric that is associated with the routing information of the interior routing protocol, which is clearly improper. Pesce explicitly teaches that this metric value is associated with the route mapping information, not the routing information. Moreover, Pesce does not actually describe updating this metric, which is substantially different from the Applicant's claim 11 that specifically requires rebuilding the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices.

Moreover, Pesce provides for blocking information that blocks the exportation of certain routes during the exportation process. This blocking information however does not update routing information of the interior routing protocol to clear the routes previously exported from the exterior routing protocol, as required by claim 11. That is, Pesce provides a mechanism to prevent the exportation of certain routes but this blocking information does not clears routes previously exported. Consequently, Pesce does not teach or suggest update routing information of the interior routing protocol to clear the routes previously exported from the exterior routing protocol, as required by claim 11.

Neither Sankaran nor Gaddis teach or suggest these aspects of Applicant's claim 11 and thereby cure the deficiencies noted above with respect to Pesce. Consequently, the combination of references lack any teaching to suggest rebuilding the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices and updating routing information of the interior routing protocol to clear the routes previously exported from the exterior routing protocol, as required by Applicant's claim 11.

In rejecting Applicant's claim 11, the Examiner only relies on paragraphs [0035] and [0045] of Sankaran for its teaching regarding what the Examiner characterizes as maintaining a count of routes exported and rejecting additional routes exported when the count exceeds the export limit set by the command. Paragraph [0035] of Sankaran discloses a threshold that triggers different discard algorithms. In this sense, paragraph [0035] of Sankaran provides for "threshold-specific discard algorithms" that are applied once certain storage thresholds are reached. Consider the example set forth in this portion of Sankaran, which provides that "once a threshold (e.g., a first threshold) is reached, a threshold-specific algorithm is applied … [and] once another threshold (e.g., a second threshold) is reached, another threshold-specific discard algorithm is applied." According to this portion of Sankaran, the thresholds are defined in terms of a percentage of a storage capacity available to store routing information and the threshold-specific discard algorithms apparently remove redundant routes from the route table. Paragraph [0045 of Sankaran reiterates various teachings of paragraph [0035] in operation with respect to a particular example.

Yet, these cited portions of Sankaran do not teach or suggest rebuilding the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices, as required by Applicant's claim 11. In this respect, Sankaran does not cure the deficiencies of Pesce noted above.

In addition, the portions of Sankaran relied on by the Examiner to reject claim 11 fail to even so much as suggest other aspects of claim 11. For example, the portions of Sankaran relied on by the Examiner refer to thresholds defined in terms of a percentage of a storage capacity, which is substantially different from an export limit that limits the number of routes exported from the exterior routing protocol process to the interior routing protocol process in the manner required by Applicant's claim 11.

As another example, Sankaran culls the routing table to remove **redundant** routes (i.e., duplicate routes) as noted by paragraph [0035], which is substantially different from updates routing information of the interior routing protocol to ***clear*** the all of the routes that were previously exported from the exterior routing protocol such that only interior routes remain, as required by Applicant's claim 11. That is, the threshold-specific discard algorithm of Sankaran makes no distinction between routes previously exported from the exterior routing protocol and

interior routes learned via the interior routing protocol when culling routes in contradiction to the explicit requirements of Applicant's currently amended claim 11.

Likewise, Gaddis does not cure the deficiencies of Pesce or Sankaran noted above. Gaddis is silent with respect to rebuilding the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices, as required by Applicant's claim 11. In fact, Gaddis as noted below defines a prefix size limit to exclude routes from being injected, but fails to mention any process whereby routing information of an interior routing protocol is rebuilt after the routes have already been injected. Moreover, Gaddis does not teach or suggest an export limit that limits the number of routes exported from the exterior routing protocol process to the interior routing protocol process in the manner required by Applicant's claim 11.

According to the Examiner, neither Pesce nor Sankaran teaches a user-defined size threshold, but column 17, lines 29-34 of Gaddis teach what the Examiner characterizes as a prefix limit that may be set for injected routes. According to the cited portion of Gaddis, what the Examiner characterizes as a "prefix limit" is in fact a size limit that "may be placed on the prefix/mask to limit the volume of injected routes that will be used." The prefix/mask discussed in this portion of Gaddis refers to an address prefix or IP address mask and the size limit discussed in this portion of Gaddis refers to a limit on the size of the prefix/mask. Defining a limit on a prefix/mask is substantially different than defining an export limit that causes the network device to enter an overload condition in the manner required by Applicant's claim 11. Consequently, Gaddis does not cure this deficiency of Sankaran noted above.

In summary, Pesce teaches to exporting routes between route tables maintained by different routing protocols, one of which may represent an exterior routing protocol while another represents an interior routing protocol. The Pesce system describes route mapping information to effect the exportation of routing information from the exterior routing protocol to the interior routing protocol. The route mapping information includes rules that are stored as entries to a set rule table, each of which may be associated with a metric value and a metric scope. Sankaran describes a system that provides for storage capacity thresholds, which when reached trigger a corresponding one of a plurality of different threshold-specific discard algorithms. The threshold-specific discard algorithms cull redundant routes regardless of

whether such routes represent routes exported from the exterior routing protocol to the interior routing protocol. Gaddis then provides teachings for a defining a size limit that limits the size of a prefix/mask.

The combination of Pesce and Sankaran results in a system capable of defining a threshold and a threshold-specific discard algorithm that limits the exportation of routes from the exterior routing protocol to the interior routing protocol based on a storage capacity available to store routes by the interior routing protocol. Further combining Gaddis with this Pesce/Sankaran system results in a system that enables the definition of this threshold as a size limit placed on the prefix/mask. Applicant is unsure as to how this combination may produce any feasible result. Consequently, Applicant presumes that the Examiner cites Gaddis only for its suggestion that such thresholds may be user defined.

Even with this assumption in mind, the Pesce/Sankaran/Gaddis system only enables thresholds to be defined that invoke a threshold-specific discard algorithm that culls routes regardless of whether these routes constitute exported routes or not. That Pesce enables metrics to be associated with the route mapping information and that routes can be blocked using blocking information seems irrelevant considering that the metric required by Applicant's claim 11 is defined for actual routing information, not route mapping information, and the update of the routing information once the network device enters the overload condition is to clear routes previously exported, as noted above with respect to Applicant's claim 11, not block the exportation of routes.

In this respect, the combination of Pesce, Sankaran and Gaddis fails to teach or suggest the method of Applicant's claim 11 comprising, when the number of routes exported from the exterior routing protocol process to the interior routing protocol process exceeds an export limit, operating the network device in an overload condition in which the network device: (i) updates routing information of the interior routing protocol to clear the routes previously exported from the exterior routing protocol, (ii) rebuilds the routing information of the interior routing protocol by updating the routing information of the interior routing protocol to associate interior routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices, and (iii) advertises the updated routing information to another network device.

Independent claims 1, 8, 18, 27 and 33

With regard to independent claims 1, 8, 18, 27 and 33, the applied references fail to teach or suggest each and every limitation recited by these independent claims for at least one of the reasons noted above with respect to claim 11. For example, Pesce, Sankaran and Gaddis fail to teach or suggest updating routing information to associate the routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices when the count exceeds the export limit, as required by applicant's claim 1. As noted above, none of these references teaches or suggests a maximum metric that defines a maximum distance from the network device to neighboring network devices. Pesce's reference to a metric value and scope, again as noted above, falls short of the metric required by claim 1 in that the Pesce metric value refers to a metric associated with route mapping information not actual routing information. Sankaran and Geddis do not cure this deficiency of Pesce. Consequently, the applied references to not teach this aspect of claim 1.

As another example, the applied Pesce, Sankaran and Gaddis references fails to teach or suggest maintaining respective counts of routes exported from an exterior routing protocol executing on the network device to each of the instances of the interior routing protocol executing on the network device, as required by currently amended claim 8. Instead, Sankaran only teaches to a storage capacity threshold, which is substantially different from maintaining respective counts of routes exported form an exterior routing protocol, as required by claim 8, as amended. To illustrate the difference, consider that Sankaran thresholds would not discriminate between exported routes and routes learned using the internal routing protocol as both would add routes that increase the amount of memory or storage consumed. In comparison, Applicant's currently amended claim 8 requires maintaining counts of routes exported from an exterior routing protocol, which is substantially different from the thresholds described by Sankaran. Consequently, the applied references to not teach this aspect of claim 8, as amended.

To the extent independent claims 18, 27 and 33 recite limitations similar to those referenced above with respect to claims 1, 8 and 11, the arguments made above apply to these independent claims 27 and 33 and to the claims that depend from claims 1, 8, 11, 18, 27 and 33.

In the current Final Office Action, the Examiner rejected claims 6 and 32 under 35 U.S.C. 103(a) as being unpatentable over Pesce et al. (U.S. Patent No. 7,328,278), Sankaran et

al. (U.S. Patent Publication No. 2003/0231587) and Gaddis et al. (U.S. Patent No. 7,554,930) in further view of Rochberger et al. (U.S. Patent No. 6,212,188). Applicant respectfully traverses the rejection

Rochberger

With respect to the additionally cited reference, Rochberger, the Examiner appears to only rely on Rochberger in rejecting claims 6 and 32 to teach or suggest setting an overload bit upon a network device entering an overload status. The portions relied on by the Examiner in rejecting these claims however fail to cure the deficiencies noted above with respect to the combination of Pesce, Sankaran and Gaddis. The combination of Pesce, Sankaran and Gaddis therefore fails to teach or suggest the techniques defined by Applicant's claims.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 1, 6, 8, 11-13, 15, 18-22, 26, 27, 30, 32, 33, 39 and 40 under 35 U.S.C. 103(a). Withdrawal of this rejection is requested.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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